L. C. REED.

PANEL BOARD.

APPLICATION FILED AUG. 9, 1907.

956,419.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.

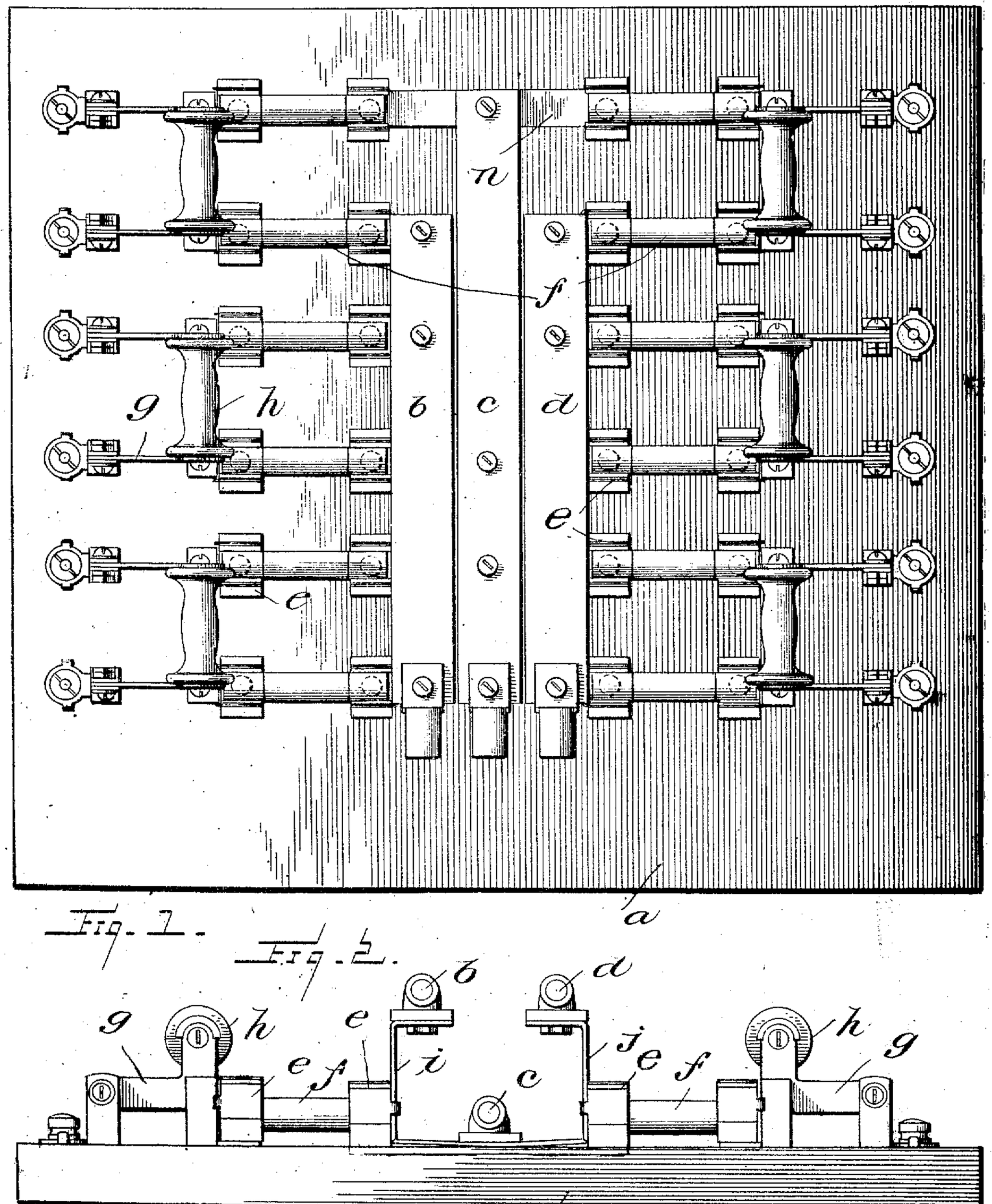


Fig. 1.

Fig. 2.

WITNESSES:

N. F. Hoyle.

A. W. Neale, Jr.

INVENTOR

Lyman C. Reed.

BY

Wilkinson, Fisher & Witherspoon

Attorneys.

L. C. REED.

PANEL BOARD.

APPLICATION FILED AUG. 9, 1907.

956,419.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 2.

Fig. 12.

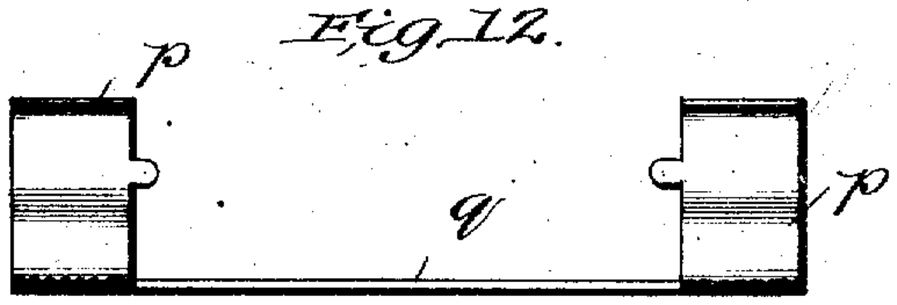


Fig. 13.

Fig. 11.

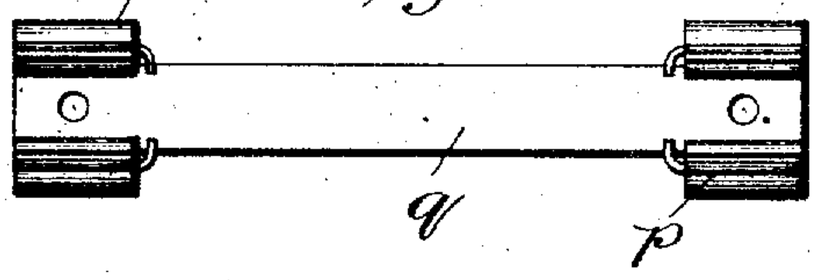


Fig. 10.

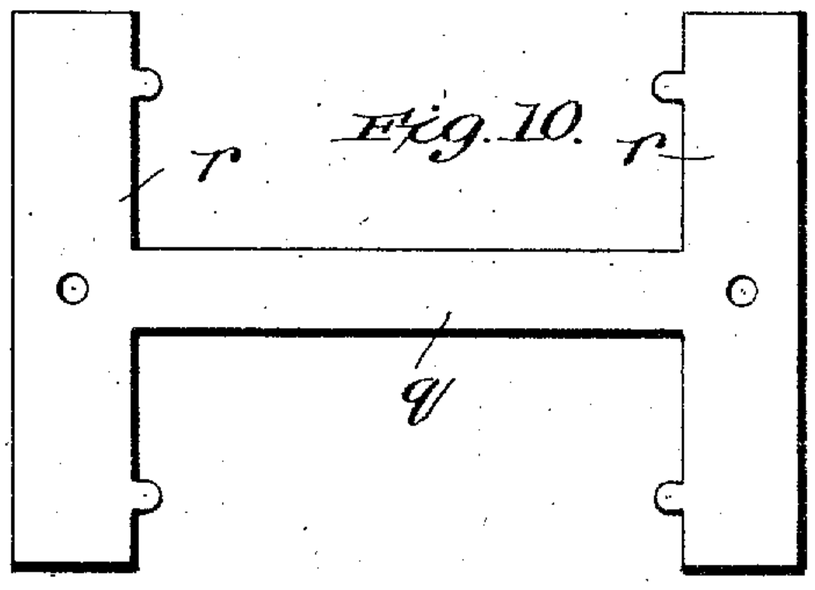


Fig. 3

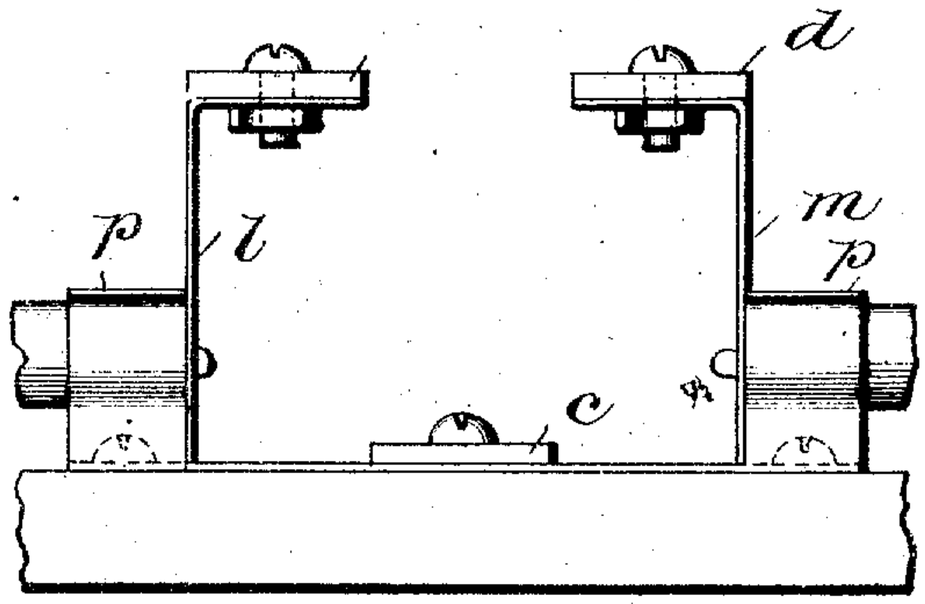


Fig. 4.

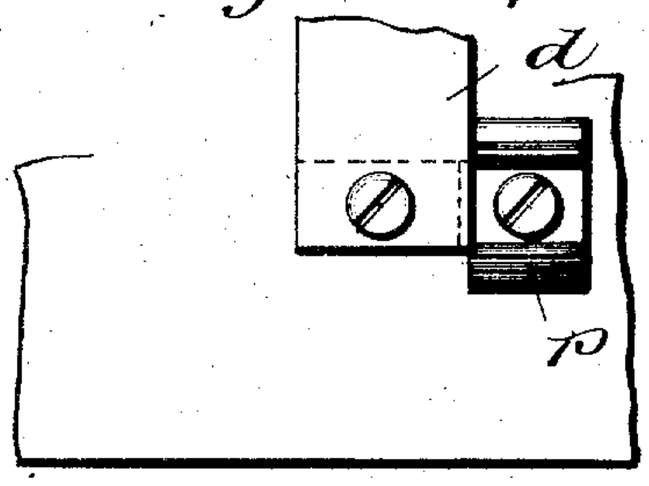


Fig. 5.

Fig. 7.

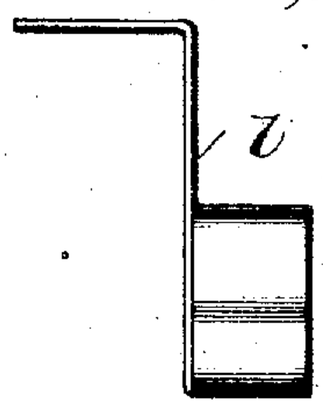


Fig. 8.

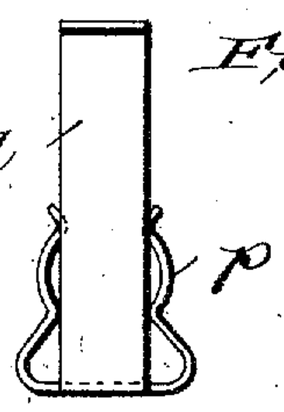
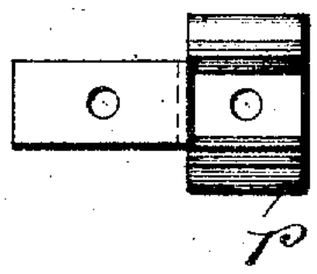


Fig. 6.



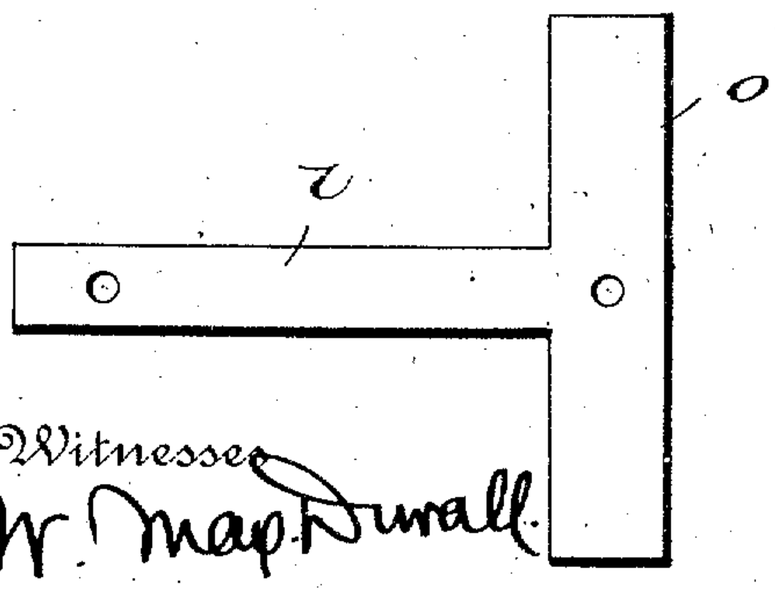


Fig. 9

Witnesses
W. MacDonald.
A. W. Neale Jr.

Inventor
Lyman C. Reed by
Wickman Fish &
Wickham
Attorney

UNITED STATES PATENT OFFICE.

LYMAN C. REED, OF NEW ORLEANS, LOUISIANA.

PANEL-BOARD.

956,419. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed August 9, 1907. Serial No. 387,813.

To all whom it may concern:

Be it known that I, LYMAN C. REED, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Panel-Boards; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in panel board construction, wherein a special arrangement of the main bus-bars and branch bus-bars in connection with the usual switches and fuses is provided.

The object of my invention is to provide suitable supports for elevating the two outer bus-bars beyond the plane of the middle bus-bar, and to thereby enable the said outer bars to be brought closer together, and the whole panel board made narrower, than has heretofore been possible, and for an object more fully disclosed hereinafter.

A further object of my invention, is to produce an improved form of combined fuse clip and bus-bar connection, whereby the construction of the panel board is greatly simplified.

Referring to the accompanying drawings forming a part of this specification:—Figure 1 is a plan view of my panel board, arranged for the ordinary system of bus-barring commonly employed in wiring systems, and Fig. 2 is an end view thereof. Fig. 3 represents a fragmentary end view of my panel board provided with my improved combined fuse clip and bus-bar connection. Fig. 4, a plan view of the improved double fuse clips connected to the bus-bar *c*, and Fig. 5, a like view of a simple clip and support connected to the bus-bar *d*. Fig. 6 is a plan view of a single clip and support detached, and Figs. 7 and 8 edge and side elevational views of the same. Fig. 9 is a plan view of the sheet metal blank out of which I form the combined bus-bar support and fuse clip disclosed in Figs. 5, 6, 7 and 8. Fig. 10 is a like view of the blank out of which I form the clips shown in Figs. 3, 4, 11, 12, and 13. Fig. 11 shows these clips in plan; Fig. 12 in side elevation, and Fig. 13 in end elevation.

Like letters indicate like parts in all the views.

a represents the base of my panel board, which may be made of any suitable material, but slate is preferred, and *b*, *c* and *d*, the bus-bars of an ordinary three wire system, employing either direct or alternating currents. The outer bus-bars *b* and *d*, instead of lying in the same plane as the middle bar *c*, as heretofore, are mounted on the preferably, integral supports *i* and *j*, U-shaped, as shown, and the length of these supports is such that the necessary insulating distance from the middle bar *c* is secured, while their outer edges represent the minimum distance that can be used under the established rules of the Underwriters Bureau. The said middle bus-bar *c* is mounted in the same position as is common in panel boards in general use, but by raising the outer bars *b* and *d*, as above described, into a plane above the plane in which the bar *c* is placed, they may be brought much closer together than heretofore, without sacrificing any insulating space; and therefore the whole board can be made narrower than has been possible in the old boards. This feature of narrowing my board, constitutes an important feature of my invention, in that by making the board narrower, I not only reduce the cost, but I am enabled to locate standard boards of my make between the flanges of beams, and in other out-of-the-way places about modern steel buildings, that it is desirable to use, which are now incapable of use for such purposes.

The reason why other boards cannot be so located is found in the fact that the insulation requirements of the standard boards now used compel the same to be at least a certain number of inches wide, and therefore, spaces between the flanges of beams, etc., too narrow for such boards cannot be used for their accommodation. With my boards, on the other hand, while complying fully with all the underwriters' requirements, I can make them sufficiently narrow to locate them in such places, and thereby get them out of sight, and out of the way.

In the drawings;—*e* represents the fuse clips, *f* the fuses, and *g* the switches with the insulating handles *h*, all of the usual construction, and all occupying the same space, but accommodated on a narrower base than heretofore.

n represents a branch bus-bar, joined to the middle bar *c*, and the distance between the bus-bars *b* and *d* and the fuse clips *e* joined to this branch bar *n*, see Fig. 1, is

again of the standard length, but since it is measured up and away from the base *a* instead of laterally along the same, there is still a saving in the width of said base *a*, although all the spacings of parts on said base still, conform to the requirements of the Underwriters Bureau.

In the form of my invention shown in Figs. 1 and 2, the fuses, clips, switches, etc., are of the usual construction and the main novelty resides in providing the elevated supports *i* and *j* for the outer bus-bars *b* and *d*, as above stated, but it is evident that this is not the only structure that may be employed.

In Figs. 3, 5, 6, 7, 8 and 9, I have shown a modified and improved support *l* for the bars *b* and *d*, which has integral therewith the fuse clips *p*. These supports *l* are formed from the T-shaped blank shown in Fig. 9, as provided with the wings *o*. These blanks are struck out of suitable sheet metal, and perforated with the two holes shown, they are then bent up into the form shown in Figs. 7 and 8, providing the clips *p*, and the supports for the bus-bars *b* and *d*. The bars are secured thereto and the clips secured in place, as shown in Figs. 3 and 5. It will thus be seen by this cheap and simple device, I am not only enabled to elevate the bars *b* and *d*, above the bar *c*, but at the same time I avoid making a joint between the fuse clips and the supports for the said bars *b* and *d*, thus saving both time and material.

The connection between the fuse clips and the bar *c*, is equally simple, and is shown in Figs. 3, 4, 10, 11, 12 and 13. Here, the double T-shaped blanks, shown in Fig. 10, and having the wings *r*, *r*, joined by the body portions *q*, are likewise struck out of sheet metal, suitably perforated and their wings *r*, *r* bent up to form the clips *p*, as shown. The bus-bar *c* is secured to the same, and the clips secured in place, as shown in Figs. 3 and 4. Here again, by an exceedingly simple and cheap device, I am enabled to join opposite fuse clips with the middle bus-bar and avoid the use of joints at the clips themselves.

The whole device, it will be seen is exceedingly simple, cheap to construct, easy to assemble, and certain in action, besides it enables me to so narrow the boards as to occupy waste places between the flanges of beams that at present cannot be occupied at all, and which are especially suited for my purpose, in that they afford very convenient leads for wires, etc.

Of course, I do not limit my invention to the precise details of construction and arrangement of parts shown, since both may be greatly varied, without departing from the spirit of my invention. For instance, one or both of the bus-bars *b* or *d* and the clips, by lengthening the supports, might be placed above the bar *c*, so that the board may be still further narrowed, and still preserve its proper insulating distances. And again, I may employ my board for a two wire system, by simply removing the bar *c* and suitably connecting the bars *b* and *d* to branch bus-bars by means of supports *i* and *j*.

Other changes will readily suggest themselves to those skilled in the art.

Having now described my invention, what I claim and desire to secure by Letters Patent, is:—

1. In a panel board provided with the usual switches and fuses, the combination with three bus-bars, of supports for the two outer bars, of a length sufficient to raise the same a distance above the plane of the inner or middle bar to afford a standard insulating space between each of said outer bars and said middle bar, substantially as described.

2. A panel board provided with two outer bus-bars and a middle bus-bar, combined with supports for said outer bars of such a length as to raise them a distance above said middle bar sufficient to provide a standard insulating space between said outer and said middle bar, and said supports secured a distance apart sufficient to provide a standard insulating space between said outer bars, substantially as described.

3. A panel board provided with a plurality of bus-bars, and fuse clips, and with a branch bus-bar, and suitable supports for two of said bus-bars raising them in a plane above said fuse clips above a third bus-bar and above said branch bus-bar, a sufficient distance to provide standard insulating spaces between said raised bus-bars and said fuse clips and said other bus-bars, substantially as described.

4. In a panel board, the combination of three bus-bars, two of which are elevated above the third, a series of fuse clips, and supports for said elevated bars integral with some of said fuse clips, and integral connections between opposite pairs of some of the other of said clips joining said third bus bar, substantially as described.

5. In a panel board, a combined fuse clip and bus-bar connection, composed of a single integral piece of sheet metal suitably shaped, and of a length to provide standard insulating spaces between the said bar and clips, substantially as described.

6. In a panel board, a combined fuse clip and bus-bar connection, composed of a single integral piece of sheet metal, suitably fashioned and of a length to support said bar a distance above said clip sufficient to provide a standard insulating space between said bar and clip, substantially as described.

7. In a panel board, the combination with

a set of fuses and switches, of three bus-bars, the outer two of which are raised above the middle bar and spaced apart a distance sufficient to provide the standard insulating space, combined integral sheet metal supports and fuse clips for said raised bars, and combined integral sheet metal fuse clips and connections for said third bar, substantially as described.

8. In a distributing or switch panel, an insulating base, a terminal or bus-bar elevated above the surface of said base, a terminal or bus-bar located in proximity to the surface of said base, a transverse bar in proximity to the surface of said base and connected directly with the lower terminal bar, and a second transverse bar in proximity to the surface of the base, having an integral upturned end and an integral overhanging portion extending beyond the lower and upturned portions of said transverse bar of which it is a part, and secured to said elevated terminal bar, in order that maximum air-space and maximum linear distances between the terminal bars and their supports are obtained.

In testimony whereof, I affix my signature, in presence of two witnesses.

LYMAN C. REED.

Witnesses:
THOS. J. WHITEHEAD,
W. J. BRINKMANN, Jr.